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Ethnic Competition and Opposition to Ethnic Intermarriage in the Netherlands: A Multi-Level Approach

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This study investigates the relationship between characteristics of the living environment and antagonistic attitudes towards ethnic out-groups, with a focus on the explanation of opposition to ethnic intermarriage. Previous studies on the relationship between the living environment and prejudice-related attitudes used at most a limited set of contextual characteristics. We investigate to what extent relative group sizes, economic competition, cultural competition, safety threats, and social cohesion within Dutch municipalities and neighbourhoods affect antagonistic attitudes once social origin characteristics and other relevant individual-level characteristics are controlled for. To test hypotheses derived from Ethnic Competition Theory and Contact Theory, we used data from the Netherlands Kinship and Panel Survey supplemented with unique aggregate demographic statistics. The results show that proximity of ethnic out-group members in the municipality reduces opposition to ethnic heterogamy. However, an increase in the ethnic out-group proportion is positively related to opposition to ethnic intermarriage. Moreover, at the neighbourhood level, proximity of ethnic outgroups increases opposition among the lower educated, whereas it decreases opposition among the higher educated. These findings indicate that the threat mechanism, the contact mechanism, and selective migration operate at the same time. Economic competition is the only type of competition that evokes opposition to ethnic intermarriage.

Introduction

In this paper we set out to explain antagonistic attitudes towards ethnic out-groups and in particular the views of the ethnic majority group towards ethnic intermarriage. The Dutch society consists of approximately 10 per cent non-western immigrants (Statistics Netherlands, 2006a). Of all marriages in 2005, 5 per cent were between a native Dutch and a non-western immigrant (Statistics Netherlands, 2006b). Marriage between an ethnic immigrant and a native of the host country can be considered as the final step of the integration process for immigrants (Gordon, 1964; Hooghiemstra, 2003), and mixed marriages are an indicator of cohesion within society. Opposition to ethnic heterogamy among native Dutch would indicate a stagnating integration process and undermines cohesion.

Opposition to ethnic intermarriage is one of the components of social distance (Bogardus, 1928) and the broad concept of prejudice (Allport, 1954; Pettigrew and Meertens, 1995) and as such it will be

highly associated with other indicators of prejudice and ethnic exclusionism. In this contribution we will investigate to what extent structural characteristics of neighbourhoods and municipalities affect opposition to ethnic intermarriage next to individual characteristics. Moreover, we will investigate the relative impact of different types of ethnic competition (i.e. economic, cultural, and physical) on opposition to ethnic intermarriage.

Ethnic Competition Theory (ECT) is usually developed as a framework for predicting effects of individual-level as well as contextual-level structural characteristics on antagonistic attitudes. ECT poses that ethnic competition, either at the individual or group level, actual or perceived, enhances negative sentiments against ethnic out-groups by provoking threats to personal and group interests (Coser, 1956; Coenders, 2001). Ethnic *group* competition is the aggregation of individual competition experiences and may be over economic resources (Blalock, 1967), power (Blalock, 1967), cultural resources or collective identity (Tajfel, 1982). Persons in specific social strata will resemble each other in antagonistic attitudes, not necessarily because all individual members have the same personal ethnic competition experiences but also because their perceived ethnic competition is a result of competition experiences of other members in their social strata. A sudden rise of immigrants at the national level leads to antagonistic attitudes, not necessarily because personal ethnic competition experiences are suddenly more prevalent but because these immigrants are perceived as a potential competitive threat for members of the ethnic in-group (Blumer, 1958; Bobo and Hutchings, 1996).

Studies focussing on structural sources for variations in antagonistic attitudes at the contextual level have mainly used size of the foreign population and economic conditions as indicators for ethnic-group competition. If prejudicial attitudes resulting from the presence of ethnic minorities are a threat response, the dynamics of this response should be made explicit (Taylor and Moghaddam, 1987). Assessment of the importance of types of ethnic competition remains to be made (Taylor, 1998). In this contribution, we aim to investigate the relative impact of different types of ethnic competition (i.e. economic, cultural, and physical) on opposition to ethnic intermarriage.

As a result of ECT's group level focal point, most studies focussing on the impact of contextual characteristics on antagonistic attitudes have used the country as a unit of measurement. However, there are several reasons to expect that structural characteristics of smaller geographical units than the country, such as municipalities and neighbourhoods, affect antagonistic attitudes, and consequently opposition to ethnic intermarriage. The second aim of our contribution is to investigate to what extent neighbourhood and municipality characteristics affect opposition to ethnic intermarriage next to individual characteristics.

Results of recent studies on the link between the competitive environment and antagonistic attitudes have been inconsistent (Quillian, 1995; Taylor, 1998; Oliver and Mendelberg, 2000; Gijsberts and Dagevos, 2004; Lubbers *et al*., 2006; Semyonov *et al*., 2006). Taylor (1998) has shown that resistance among whites towards blacks is higher when the proportion of blacks in neighbourhoods or schools is higher, but could not relate the percentage of Latinos to anti-Latino sentiments. Lubbers *et al*. (2000) showed that right-wing voting in Belgium depends on the percentage of ethnic out-groups at the municipality level. But in a study on the German situation, Semyonov *et al*. (2006) could not support the theoretical expectation that the size of the ethnic out-group in the locale increases exclusionary attitudes. Gijsberts and Dagevos (2004) showed that an influx of ethnic minorities at the neighbourhood level increases negative stereotypes, but did not influence attitudes related to the Dutch multicultural society. The effects of relative group sizes and other characteristics of the living environment on antagonistic attitudes may depend on the antagonistic view in question, the unit of measurement of the locale, and the specific out-group.

If ethnic competition affects ethnic exclusionism, as ECT predicts, it should have an effect on views regarding ethnic heterogamy, since acceptance of a member of an ethnic out-group as a close relative is the ultimate form of ethnic inclusion. However, for a sub-sample, we are able to compare our results regarding opposition to ethnic intermarriage with other antagonistic views. In this paper we have three levels of measurement: the individual, the neighbourhood and the municipality. Moreover, to explore whether there are group-specific exclusionistic reactions we will investigate opposition to ethnic heterogamy in relation to Turks, Moroccans and the Surinamese, the main ethnic groups in the Netherlands. We contribute to the body of literature by including, for the first time, a wide array of indicators for *regional* variance in ethnic competition in the explanatory model, next to relative group size measures and relevant individual-level characteristics. We will test several hypotheses derived from ECT and Contact Theory with a national representative data set supplemented with unique aggregate demographic statistics on the city *and* neighbourhood level.

Theoretical Expectations

Opposition to ethnic intermarriage is a type of ethnic exclusionism, just like opposition to integrated housing, denial of civil rights to ethnic minorities (Scheepers *et al.*, 2002) and opposition to asylum seeker centres (Lubbers *et al.*, 2006). The explanations proposed by ECT for ethnic exclusionism should therefore also hold for views regarding ethnic heterogamy.

Ethnic group competition takes place in economic and cultural units. In the Netherlands, municipalities and sometimes even neighbourhoods have their own local authority and run local elections. There is considerable variance in employment levels across cities and neighbourhoods. Also, the real estate market varies widely between and within cities, and competition for primary education and public services takes place within cities or neighbourhoods (Oliver and Mendelberg, 2000). Moreover, a regional group identity is developed due to, among other factors, local news media, soccer clubs, dialects and the social network; in general, between 10 and 20 per cent of the social network of a Dutch individual consists of people who live in the same neighbourhood (Flap, 1999). We therefore expect the living environment of neighbourhoods and municipalities to affect opposition to ethnic heterogamy: *Opposition to ethnic intermarriage varies at the municipality level and at the neighbourhood level (Regional variance hypothesis)*.

To assess whether the variance at the locale is in part genuinely due to structural characteristics, we will control for possible composition effects. Based on previous research on antagonistic attitudes towards ethnic out-groups, we expect older people, men, the lower educated, the lower strata together with the self-employed, and religious individuals, to express higher levels of opposition to ethnic intermarriage than young people, women, the higher educated, the higher social strata, and non-religious individuals (Kunovich, 2004; Coenders *et al.*, 2005).

We investigate opposition to ethnic intermarriage with specific ethnic minority groups: Surinamese, Turks, and Moroccans. These groups form 7 per cent of the current Dutch population (Statistics Netherlands, 2006a). Turks and Moroccans are predominantly Muslim. The Surinamese are Christian, Hindu, or Muslim. Opposition to ethnic heterogamy may therefore overlap with opposition to religious heterogamy. Consequently, we expect that religiosity will be a stronger predictor for opposition to ethnic intermarriage than for other antagonistic views. Given the regional variation in religiosity and denominations within the Netherlands, the regional variance in opposition to ethnic intermarriage will be, in part, a consequence of the religious composition of the locale.

Previous research has pointed to the relevance of the family of origin in relation to antagonistic attitudes towards ethnic minorities (Hello, 2003; Jaspers *et al.*, 2008). To control rigorously for possible composition effects, we include parental educational level, occupational position of the father during childhood and mother's denomination in the explanatory model, and expect these effects to take the same direction as those of the respondent.

The actual ethnic competition within geographic units such as neighbourhoods and municipalities will be more severe the larger the percentage of ethnic out-groups. The visibility of ethnic minorities in the locale is likely to influence the perceptions of relative group sizes and hence perceived ethnic competition as well (Blalock, 1967; Taylor, 1998; Oliver and Mendelberg, 2000). Variation in actual ethnic competition and in perceived ethnic competition due to locale variation in relative group sizes, leads us to expect that: *Regional variation in opposition to ethnic intermarriage is partially a consequence of the relative group size at the locale (Relative group size hypothesis)*. However, for Coenders (2001) and Olzak (1992: 35) the mechanism underlying perceived threat and ethnic antagonism is not only the absolute size of minorities in the population, but ethnic tensions will increase by changing levels of out-group sizes as well. *Regional variation in opposition to ethnic intermarriage is partially a consequence of the changes in the relative group size at the locale (Change in relative group size hypothesis)*.

There is a strong regional variation in the concentration of ethnic minorities in the Netherlands, with different patterns for each of the three minority groups (Statistics Netherlands, 2006c). We can relate the presence of Surinamese, Turks, and Moroccans in a municipality to the resistance to intermarriage with a member of the specific ethnic group. Hence we can test the propositions from ECT on the effect of relative out-group sizes more rigorously, by investigating whether the relative group size of a specific ethnic group predominantly affects antagonistic attitudes directed to this specific ethnic minority group.

Antagonistic attitudes increase when the group economic situation worsens (Blalock, 1967; Quillian, 1995, 1996). The socio-economic status of the locale and changes herein are direct measures of the majority group's actual economic environment. We therefore pose: *Opposition to ethnic intermarriage is partially*

a consequence of (changes in) the socio-economic status of the locale (Economic environment hypothesis).

Cultural and Physical Competition

Due to the focus on relative group size and economic circumstances as the main contextual characteristics in empirical studies within the group-threat theory tradition, other forms of ethnic competition have been neglected in the literature (Taylor, 1998). To evaluate the underlying mechanism between actual competition at the contextual level and antagonistic attitudes, measures of economic *and* cultural competition are called for, next to measures of relative group size (Taylor, 1998; Oliver and Mendelberg, 2000).

Cultural competition takes place at the religious market (e.g. presence of places of worship) and within the educational system (e.g. presence of schools exclusively for Muslims (Taylor, 1998)). The presence of mosques and Muslim schools in one's living environment highlights the cultural distinctiveness between native Dutch and ethnic out-groups and as a consequence, concerns over cultural identity will increase among native Dutch (Sniderman *et al*., 2004). We use information on the geographical location of mosques and schools exclusively for Muslims as an indicator for cultural competition at the contextual level and hypothesise that: *The more mosques and Muslim schools present at the locale, the more opposition to ethnic intermarriage at the locale (Cultural environment hypothesis)*.

Members of most ethnic minority groups in the Netherlands are overrepresented in crime statistics. Almost 40 per cent of the population of suspects of criminal offences committed in 2002 had an ethnic minority background, whereas the total of ethnic minorities (both EU and non-EU) forms only 20 per cent of the Dutch population (Blom *et al*., 2005). Moreover, crime is the most important theme in newspaper articles on Turks, Moroccans, and the Surinamese in the Netherlands (Lubbers *et al*., 1998). Publicity on criminal behaviour by ethnic-minority members, often stirred up after Muslim terrorism and honour-related violence, is likely to attribute crime as characteristic of ethnic out-groups. This may fuel a physical, or safety threat (Taylor, 1998; Sniderman *et al*., 2004). We assume that feelings of fear and physical threat depend on the level of crime in municipalities and neighbourhoods. These feelings in turn may lead to lack of trust in others, and suspicion towards out-groups in general. We, therefore, deduce the following hypothesis: *The higher the crime rates in a locale, the higher the opposition to ethnic intermarriage (Physical environment hypothesis)*.

Opposition to ethnic intermarriage may also be heightened by a lack of social cohesion. Socially disintegrated individuals feel insecure and will search for new ways to derive a positive self-identity. To compensate for their loss in positive self-identity, such individuals have a stronger need for attachment to the ethnic in-group and increase their ethnic in-group favourable attitudes and negative views towards ethnic out-groups (Arendt, 1951; Lubbers, 2001). We assume that social cohesion will be lower within neighbourhoods and municipalities that are characterized by higher moving mobility rates. This leads to the following hypothesis: *Residents in neighbourhoods and municipalities characterized by high rates of mobility will express higher levels of opposition to ethnic intermarriage than residents in neighbourhoods and municipalities with lower rates of mobility (Cohesive environment hypothesis)*.

Larger Dutch cities have had a longer history with relatively high percentages of non-Western ethnic minorities. Due to the longer visibility of ethnic minorities within large cities and to the accumulation of problems associated with large cities such as organized crime, housing shortages and ethnic minorities without legal residence permits, we expect that: *Respondents in larger cities express higher levels of opposition to ethnic intermarriage than respondents in smaller cities (Large city hypothesis)*.[1]

Contact Theory

In line with ECT, we stated that the ethnic minority percentage in neighbourhoods and municipalities is likely to be positively related to perceived ethnic competition and hence to opposition to ethnic intermarriage. However, Contact Theory offers an alternative hypothesis to ECT. Intergroup contact reduces prejudice, even if Allport's optimal contact conditions (Allport, 1954) are not met (Pettigrew and Tropp, 2006). Although the causal mechanism is not undisputed, the literature seems to suggest that the causality runs mainly from contact to prejudice reduction (Pettigrew and Tropp, 2006). Wagner *et al*. (2006) show that, at least in the case of Germany, the percentage foreigners in the locale is negatively related to prejudice even after controlling for relevant individual level characteristics. They further established that actual contact with foreigners in the neighbourhood increases with larger out-group proportions in the living environment (Wagner *et al*., 2006).[2] Given these findings and in line with contact theory,

we formulate a *Contact Hypothesis*: *The higher the percentage of ethnic minorities in the neighbourhood and municipality, the lower the opposition to ethnic intermarriage*.

However, higher levels of contact are in part a consequence of tolerant attitudes as well (Pettigrew and Tropp, 2006). People with more tolerant attitudes may embrace residential proximity to immigrants and choose to live in neighbourhoods and municipalities with higher percentages of ethnic minorities (Wagner *et al.*, 2006). Likewise, one could also expect selective out-migration of people with intolerant attitudes from locales with high percentages of ethnic minorities i.e. 'white flight' (Massey *et al.*, 1994). We assume that respondents with low educational levels are more often relegated to neighbourhoods and municipalities with higher percentages of ethnic minorities due to economic constraints than respondents with high educational levels. Selective migration therefore implies a negative interaction between educational attainment and relative group size. If the effect of relative group size on opposition to ethnic intermarriage is positive for the lower educated (or for all educational levels) we would find support for the threat mechanism. If on the other hand the effect of relative group size on ethnic heterogamy is negative for all educational levels, this would be a corroboration of the contact theory.

In this contribution, we thus pose that two mechanisms may operate at the neighbourhood and the municipality level simultaneously: the threat mechanism and the contact mechanism. Furthermore, we pose that due to selective migration out-group sizes may be positively related to opposition to ethnic intermarriage for the lower educated and negatively related to opposition to ethnic intermarriage for the higher educated.

Data and Methods

For information on individual-level characteristics, we used data from the main sample of the Netherlands Kinship and Panel Study (NKPS) wave 2002 (Dykstra *et al.*, 2004).[3] This is a random sample of individuals within private households in the Netherlands, with a minimum age of 18 years and a maximum age of 79 years. To collect data from the main respondents, Computer Aided Personal Interviewing (CAPI), supplemented with self-completion questionnaires, was used. The overall response rate was 38 per cent. Response rates tend to be rather low in the Netherlands, and this study is no exception. For the present study we selected respondents with both Dutch-born parents and who returned the self-completion questionnaire ($N = 6{,}538$). A sub-sample of these respondents ($N = 903$) provided information on a wider set of antagonistic attitudes.

The opposition to ethnic intermarriage scale was constructed by adding the scores on three items on views related to ethnic intermarriage with specific ethnic groups ['Would it bother you if one of your children decided to marry someone of (Turkish/Moroccan/Surinamese) descent?', with answer categories (4) 'bother me a lot', (3) 'bother me a little', (2) 'neutral', (1) 'not bother me', (0) 'not bother me at all']. The three items constituted a Mokken scale (Mokken, 1971): the Loevinger's H for the entire scale was 0.92 and the lowest Loevinger's H per item pair was 0.89. Respondents are most opposed to an ethnic intermarriage with Moroccans, followed by an ethnic intermarriage with Turks. This finding is in line with previous research on the ethnic hierarchy in the Netherlands (Hagendoorn and Pepels, 2003). The constituted 'ethnic intermarriage scale' runs from 0 to 12, and higher scores indicate more opposition to ethnic heterogamy. It closely follows a normal distribution. Approximately 40 per cent of our respondents are bothered if one of their children decides to marry someone from either Turkish, Moroccan, or Surinamese descent.

To assess the construct validity of the ethnic marriage scale, we tested the relationship to other prejudice-related concepts among the indicated sub-sample of respondents. Within this sub-sample, the three items on ethnic intermarriage referring to a specific ethnic group also formed a Mokken scale with other items measuring social distance (Bogardus, 1928). As expected, exclusionistic attitudes were most prevalent when it came to ethnic heterogamy. Furthermore, the ethnic intermarriage scale correlated significantly with more restrictive views on Dutch immigration policies (e.g. 'To what extent do you believe the Dutch government should be lenient in issuing residence permits to people from other countries who wish to live and work in the Netherlands for the following reason: someone whose life is at risk in his country of origin because of the political situation', $r = 0.23$) and with negative views on the multicultural society (e.g. 'There are too many migrants in the Netherlands', $r = 0.50$).

Sex was coded as (1) male and (0) female. *Age* was measured in years. *Education* was measured in years: no complete primary = 4; primary education = 6; lower vocational education (LBO) = 8; lower general education (MAVO) = 10; medium vocational education (MBO) = 10.5; medium general education

(HAVO) = 11; higher general education (VWO) = 12; higher vocational education (HBO) = 15; and university = 16. For *parental education*, we used the highest education of either parent and it was also measured in years. We replaced missing values with mean values. The *employment categories* were measured using a condensed version of the original eleven-category EGP classification scheme created by Erikson *et al.* (1979). We used current occupational status to derive the social class of the respondent, and added the categories: pensioner, student, disabled, in care of household, and unemployed. For *father's social class* we used the occupation of the father at the time the respondent was aged 15 years, and this was measured by the EGP scheme too. The *denomination* of the respondent was measured in seven categories: no-religion, Roman Catholic, Dutch Reformed and Calvinists (synodal), other Calvinist denominations, other Christian denominations, other denominations, and missing. *Church attendance* was measured in times per year. Missing values on church attendance were set to the mean value. *Mother's denomination* was measured likewise. We chose mother's denomination instead of the father's since mothers have the strongest influence on religious socialisation (Bao *et al.*, 1999).

Macro-Level Measurements

The NKPS survey data on individual-level characteristics were enriched with data on structural characteristics of neighbourhoods (NB, four-digit zip codes) and municipalities (MP). Information on socio-economic disadvantage of the locale and relative group sizes was taken from Dutch municipalities' administration data published by Statistics Netherlands. *Percentage of ethnic minorities* at the neighbourhood and municipality levels was calculated as non-Western minorities. Within the Dutch administration data, ethnic minorities are people with at least one parent born in the respective origin country. Non-Western minorities predominantly include immigrants from Turkey, Morocco, and Suriname. We also constructed the variable change in percentage of ethnic minorities as a change score of the percentage of non-Western ethnic minorities at the locale between 2001 and 1999.[4] At the municipality level, we had additional information on percentages of the specific Moroccan, Turkish, and Surinamese ethnic groups (Statistics Netherlands, 2006b).

For 2001, a summary measure of *socio-economically disadvantaged neighbourhood (SES dis. NB)* was computed based on the results of a principal component analysis (PCA) on 2,945 neighbourhoods. The PCA included the scores of mean income of income recipients, percentage of income recipients with a low income, and percentage inhabitants living on public benefits. We labelled the first component as socio-economically disadvantaged neighbourhood. A similar procedure was followed for the raw changes in these three indicators. The extracted component of a PCA including these three change scores was labelled *change in socio-economically disadvantaged neighbourhood (ΔSES dis. NB)*. Likewise, we constructed the measurements *socio-economically disadvantaged municipality (SES dis. MP)* and *change in socio-economically disadvantaged municipality (ΔSES dis. MP)*.[5]

Locations of 39 Muslim schools in 2002 were provided by the Board of Islamic Education, ISBO (www.deisbo.nl). The best information we could find on the location of 454 *Mosques NB/MP* was a data file derived from Landman, which has been updated with internet resources. We have to acknowledge that large differences exist in the visibility of these Mosques, for which we cannot control. We counted the presence of all types of mosques and Muslim schools within neighbourhoods and municipalities.

We used two indicators for crime rates at the locale. The Dutch Police Population Monitor (PPM, Politiemonitor Bevolking) includes standardized questions on victimization experiences. We aggregated the PPM data of the 1999, 2001, and 2003 waves (approximately 150,000 respondents). *Victims of burglary NB/MP* is a count of burglary victims within the spatial units of neighbourhoods and municipalities divided by the total PMM respondents who lived within these localities. Figures on *crime statistics NB/MP* have been obtained from the Dutch police registration systems (HKS, HerkenningsdienstSysteem).[6] We aggregated data on crime statistics for the available years 2000–2004 (2,688,262 recorded offences with known location). For every neighbourhood and municipality we counted the total offences, with the exception of petty theft and traffic offences, since we do not consider these latter severe enough to cause physical threat or to be locale-specific. For our crime statistics variables, we divided these figures by the total inhabitants of the locale, as reported by the Dutch Bureau of Statistics.

The only available indicator for social cohesion at the neighbourhood level was *relative inward-moving mobility*: the number of people entering a neighbourhood from another neighbourhood per 1,000 inhabitants of the destination neighbourhood. For reasons of comparability, we used a similar measure at the municipality level (Statistics Netherlands, 2006c).[7]

The variable *city size* measures the total inhabitants of each municipality in 2001.

For 186 respondents we were unable to match any municipality characteristic. These respondents were deleted from the sample. Missing values at either the neighbourhood or municipality level regarding (changes in) economic status, percentage of ethnic minorities or mobility were replaced with grand mean values.[8]

We ended up with a workable dataset of 6,095 respondents from 2,096 neighbourhoods and 437 municipalities, thus covering 55 per cent of Dutch neighbourhoods and 86 per cent of Dutch municipalities. We centred non-categorical variables on their grand mean values, except for number of mosques and Muslim schools at the locale. Descriptive statistics may be found on the website of this contribution (Tolsma *et al.*, 2008).

Results

The bivariate relationships between individual-level characteristics and opposition to ethnic heterogamy run mostly in the predicted direction (Tolsma *et al.*, 2008; website Table 1). The longer a person has been in the educational system and the higher the social class, the less opposition one finds to ethnic heterogamy. Pensioners and housewives are most opposed to ethnic intermarriage compared to other groups. People who belong to a specific denomination—especially Roman Catholics and Calvinists—and attend church are more opposed to ethnic heterogamy than non-churchgoers and those not belonging to a specific denomination. Older people are more opposed to ethnic intermarriage than younger people, as are men compared to women. Parental characteristics are correlated to opposition to ethnic intermarriage in the same way as respondent characteristics, albeit less strongly.

Concerning the bivariate relations with the macro-level characteristics, we find that the larger the relative size of the ethnic out-group in the locale the lower the opposition to ethnic intermarriage. This is in line with the contact hypothesis. Respondents who live in socio-economically disadvantaged neighbourhoods and municipalities are on average not more (or less) opposed to ethnic heterogamy. However, respondents living in neighbourhoods and municipalities which have experienced a deteriorating economic status are, as predicted, more opposed to ethnic heterogamy. Surprisingly, all other indicators for ethnic competition run in the opposite direction than predicted. For example, the higher the crime rates in the neighbourhood or municipality, the lower the opposition to ethnic intermarriage. The bivariate correlations between contextual characteristics and opposition to ethnic heterogamy could be confounded by the composition of the locale and the interrelation between contextual characteristics. We therefore turn to the multivariate analyses next.

Opposition to Ethnic Intermarriage

We started with an empty hierarchical random intercept model to assess the variance components at the individual, neighbourhood and municipality levels. Of the total variance, a significant part, 3.5 per cent, is due to the variation between municipalities, but we do not find a significant variance component at the neighbourhood level (Table 1, model 0). We thus find only weak support for the regional variance hypothesis. This does not necessarily mean that contextual characteristics of the neighbourhood do not affect opposition to ethnic intermarriage, as we deduced from ECT. We will therefore continue our analysis as a three-level hierarchical model.[9]

To investigate to what extent parental characteristics are mediated by the characteristics of the respondents themselves, we continued our analysis by including parental characteristics in model 1 and respondents' characteristics in models 2 and 3. In agreement with our expectation, parental education, father's social class and mother's denomination affect opposition to ethnic intermarriage (Table 1, model 1). Respondents with higher educated parents are less opposed to ethnic intermarriages, respondents who grew up with a self-employed father and respondents with a Catholic or Calvinist mother are more opposed to ethnic intermarriage. Even after controlling for respondent's own educational achievement, employment status, age and sex, parental education and father's employment status still contribute significantly to the explanatory power of the model (Table 1, model 2). After controlling for respondent's religiosity in model 3, mother's denomination is no longer significant and is therefore excluded from subsequent models.

Older respondents are more opposed to ethnic intermarriage than younger respondents (model 3). Men and women do not express significantly different attitudes regarding ethnic intermarriage in our multivariate model. Higher educated individuals are less opposed to ethnic intermarriage; 1 year of education leads to a reduction of 0.13 in the opposition to ethnic intermarriage scale, which ranges from 0 to 12. Of all employment statuses, the unemployed and students are the least opposed to ethnic heterogamy.

Table 1 Hierarchical linear intercept models estimating opposition to ethnic intermarriage (0–12), $N_i = 6095$

	Model 0		Model 1		Model 2		Model 3	
	P	SE	*P*	SE	*P*	SE	*P*	SE
Constant	6.85*	0.05	6.39*	0.13	6.52*	0.19	6.44*	0.19
Parental characteristics								
Parental education (in years)			−0.14*	0.01	−0.05*	0.02	−0.04*	0.02
Father's social class (unskilled manual = ref.)								
Higher professional			−0.02	0.15	0.18	0.15	0.19	0.15
Lower professional			−0.20	0.14	0.04	0.14	0.07	0.14
Routine non-manual			−0.24∼	0.15	−0.08	0.14	−0.05	0.14
Small self-employed			0.31*	0.12	0.32*	0.12	0.25*	0.12
Skilled manual			−0.06	0.13	0.11	0.13	0.13	0.13
Mother's denomination (no denomination = ref.)								
Missing			0.93*	0.17	0.61*	0.17	0.24	0.18
Roman Catholic			0.31*	0.11	0.30*	0.11	−0.16	0.13
Dutch Reformed/Calvinist			0.58*	0.12	0.46*	0.12	0.08	0.13
Other Calvinist			0.79*	0.20	0.77*	0.19	0.13	0.24
Other Christian denomination			0.47∼	0.26	0.29	0.25	0.30	0.27
Other religion			−0.43	0.53	−0.57	0.52	−0.43	0.53
Respondent's characteristics								
Age × 10					0.20*	0.04	0.19*	0.04
Male					0.06	0.08	0.04	0.08
Education (in years)					−0.13*	0.02	−0.13*	0.02
Employment status (unskilled manual = ref.)								
Pensioner					0.27	0.20	0.19	0.20
Student					−0.71*	0.27	−0.68*	0.27
Disabled					−0.39∼	0.22	−0.32	0.22
Unemployed					−0.78*	0.28	−0.62*	0.28
In care of household					0.14	0.19	0.08	0.19
Higher professional					−0.59*	0.20	−0.53*	0.20
Lower professional					−0.51*	0.18	−0.41*	0.18
Routine non-manual					−0.42*	0.18	−0.37*	0.18
Small self-employed					−0.32	0.28	−0.27	0.28
Skilled manual					−0.14	0.23	−0.14	0.22
Religiosity								
Church attendance × 10							0.06	0.02
Denomination (no denomination = ref.)								
Missing							0.58*	0.21
Roman Catholic							0.83*	0.11
Dutch Reformed/Calvinist							0.72*	0.14
Other Calvinist							0.75*	0.28
Other Christian denomination							−0.28	0.27
Other religion							−0.45	0.29
Variance components								
Municipality	0.31*	0.07	0.21*	0.06	0.16*	0.05	0.11*	0.04
Neighbourhood	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
Individual	8.99*	0.19	8.69*	0.16	8.25*	0.15	8.13*	0.15

*$P<0.05$; ∼$P<0.10$ (two sided test of significance).

That the unemployed express high levels of tolerance is a consistent finding in the Dutch context (Coenders and Scheepers, 1998). The higher one's social class, the less opposed one is to ethnic heterogamy. Catholics and Calvinists are more opposed to ethnic intermarriage than individuals of other denominations and those who do not belong to any denomination at all. Church attendance also contributes to explaining opposition to ethnic intermarriage; frequent churchgoers are more opposed.

The individual-level characteristics included in model 3 reduce the estimated variance components at the municipality level by 64 per cent compared to the null model. This indicates that the variance at the locale is largely due to compositional effects. The respondent's denomination is responsible for almost half of the proportional reduction of the estimated variance component at the municipality level.

Next, we turn to the higher-order characteristics. In Table 2 we summarized the effects of municipality and neighbourhood characteristics. First, we added the classical structural indicators of ethnic threat and ethnic competition to the model: (changes in) relative out-group size and (changes in) economic situation. To take into account selective migration, we included the cross-level interaction between education and out-group size as well. We did this separately for the neighbourhood level (model 4) and for the municipality level (model 5).

Although the main effects of percentage of ethnic out-groups and changes herein at the neighbourhood level are not related to opposition to ethnic intermarriage, the cross-level interaction between educational level and out-group size at the neighbourhood level is negative and significant ($b = -0.02$; SE $= 0.01$; Table 2, model 4). For people who are lower educated than average, the percentage of ethnic minorities within their neighbourhood is positively related to opposition to ethnic intermarriage but for people who are higher educated than average, the relative out-group size within the neighbourhood is negatively related to opposition to ethnic intermarriage. Within neighbourhoods the threat mechanism is thus observed among the lower educated. Selective migration and the contact mechanism may account for the negative relationship between out-group sizes and opposition to ethnic intermarriage for the higher educated.

The proportion of ethnic out-groups in the municipality is negatively related to opposition to ethnic intermarriage (Table 2, model 5). The cross-level interaction between educational level and out-group size at the municipality level is not significant and does not influence the main negative effect of out-group size at the municipality level. Selective migration may thus be less pronounced between municipalities than between neighbourhoods. Our results therefore indicate that within municipalities the contact mechanism dominates the threat mechanism evoked by out-group sizes. The effect of a change in the minority size at the municipality level is positive but not significant ($b = 0.07$; SE $= 0.07$; Table 2, model 5). The economic situation of the municipality explains partially the relationship between ethnic out-group size and opposition to ethnic intermarriage; without the indicators for the economic situation of the municipality, the negative effect of percentage of out-group size at the municipality is twice as large.

Individuals in neighbourhoods with deteriorating economic conditions are more opposed to ethnic intermarriage (Table 2, model 4). At the municipality level we also observe that an economically deteriorating situation is related to a stronger opposition to ethnic heterogamy (Table 2, model 5). Surprisingly, at the municipality level the current economic situation is negatively related to opposition to the ethnic intermarriage scale; the parameter estimate is -0.07. However, since the effect of a change in this situation is larger (0.12), we find partial support for the economic environment hypothesis; variation in antagonistic attitudes is partly the result of changes in the economic competition within the locale.

In models 6 and 7 we test if our other indicators of competition affect antagonistic views towards ethnic minorities.[10] Crime statistics and the presence of mosques and Muslim schools do not influence people's opinion on ethnic heterogamy, neither at the neighbourhood level (Table 2, model 6) nor the municipality level (Table 2, model 7). We therefore have to refute the cultural and physical environment hypotheses.

Relative inward-moving mobility at the neighbourhood and municipality levels affect opposition to ethnic heterogamy, albeit in the opposite direction than predicted. As a consequence, we have to refute the cohesive environment hypothesis. The larger the relative inward-moving mobility, the less-opposed respondents are towards an ethnically-mixed marriage. Once we control for economic competition at the municipality level, municipality size does not affect respondents' views regarding ethnic intermarriage significantly. There are no other major problems to accumulate in big cities that affect opposition to ethnic intermarriage. We therefore refute the large city hypothesis.

In model 8 we focus on the characteristics that turned out to be significant.[11] The effects of change in socio-economic disadvantage at the neighbourhood level reaches the boundary of significance in model 8

Table 2 Hierarchical linear intercept models estimating opposition to ethnic intermarriage (0–12), context characteristics $N_i = 6095$[a]

	Model 4		Model 5		Model 6		Model 7		Model 8	
	P	SE	*P*	SE	*P*	SE	*P*	SE	*P*	SE
Neighbourhood characteristics										
Percentage of ethnic minorities	0.00	0.01			0.00	0.01			0.00	0.01
Change in percentage of ethnic minorities	0.00	0.02			−0.01	0.02				
Socio-economic disadvantage	−0.02	0.04			−0.03	0.04				
Change in socio-economic disadvantage	0.14*	0.06			0.11∼	0.06			0.08	0.05
Number of mosques and Muslim schools					−0.06	0.07				
Victims of burglary					−0.94	0.89				
Crime statistics					−0.12	0.17				
Relative inwards-moving mobility × 10					−0.08*	0.02			−0.07*	0.02
Cross-level interaction										
Education × percentage of ethnic minorities × 10	−0.02*	0.01							−0.02*	0.01
Municipality characteristics										
Percentage of ethnic minorities × 10			−0.15∼	0.09			0.06	0.16	−0.12	0.09
Change in percentage of ethnic minorities			0.07	0.07			0.08	0.08	0.09	0.07
Socio-economic disadvantage			−0.07*	0.04			−0.07∼	0.04	−0.07∼	0.04
Change in socio-economic disadvantage			0.12*	0.04			0.09∼	0.04	0.07∼	0.04
Number of mosques and Muslim schools							0.00	0.02		
Victims of burglary							−0.52	2.25		
Crime statistics							−0.29	0.42		
Relative inwards-moving mobility × 10							−0.07∼	0.04	−0.03	0.04
City size × 1000							0.00	0.00		
Cross-level interaction										
Education × percentage of ethnic minorities × 10			−0.01	0.01						
Variance components										
Municipality	0.08*	0.04	0.03	0.03	0.05∼	0.03	0.01	0.02	0.02	0.03
Neighbourhood	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Individual	8.15*	0.15	8.17*	0.15	8.15*	0.15	8.19*	0.15	8.16*	0.15

*$P<0.05$; ∼$P<0.10$ (two sided test of significance).
[a]Controlled for individual-level characteristics.

($b = 0.07$; SE = 0.05). Relative inward-moving mobility at the neighbourhood level explains the effect of relative inward-moving mobility at the municipality level. The cross-level interaction between education and out-group size at the neighbourhood level remains significant; providing support for the idea that the threat mechanism is evoked under unfavourable circumstances and the contact mechanism under favourable circumstances. Based on the contact theory perspective we expected that larger proportions of ethnic minorities would be related to less opposition to ethnic intermarriage. The effect of relative out-group size at the municipality level is negative and, given a one-sided significance test, significant ($b = -0.12$; SE = 0.09; $\alpha = 0.09$). Given a one-sided significance test—we deduced a directional hypothesis from ECT—the effect of an increase in the percentage of ethnic minorities is significant as well ($b = 0.07$; SE = 0.05; $\alpha = 0.10$).

Out-Group-Specific Opposition to Intermarriage

Surinamese are more often Christian than Moroccans and Turks, who are predominantly Muslim. If the effect of religion on opposition to ethnic intermarriage is due to a dislike for Muslims in particular, it is likely that religion plays a less important role regarding attitudes towards assortative mating with regards to Surinamese. Surprisingly, this is not the case. Catholics and Calvinists are just as opposed to an ethnically mixed marriage with Surinamese than to mixed marriages with Turks or Moroccans (Tolsma *et al.*, 2008; website Table 2).

To investigate whether the contextual part of the explanatory model is ethnic out-group-specific, we relate the presence of Moroccans, Surinamese, and Turks in the municipality to the resistance to intermarriage with a member of one of these specific groups (Tolsma *et al.*, 2008; website Table 2). In general, our results replicate previous results; the overall relative out-group size at the municipality level is negatively related to opposition to ethnic intermarriage with one of the ethnic groups mentioned above, and the change in the overall relative out-group size is positively related to opposition to ethnic intermarriage (although these parameters only reach significance for opposition to intermarriage with Surinamese). The percentages of Moroccans, Turks, and Surinamese in the municipality do not affect opposition to specific ethnic intermarriages significantly.

Antagonistic Attitude-Specific Relations

We repeated our analyses on the sub-sample for which we had a broader set of antagonistic views. This sub-sample includes 771 respondents with valid answers, all living in one of the 14 medium-to-large Dutch cities with a longer history of non-EU ethnic-immigrant residents.[12] First we compare the results on ethnic intermarriage for this sub-sample (Table 3, model 1) with our previous results for the complete sample (Tables 1 and 2). The individual-level characteristics have similar effects on the opposition to ethnic intermarriage scale within the two different samples. The only exception is religiosity. For respondents living in one of these 14 Dutch cities, denomination has a stronger effect on opposition to ethnic intermarriage than for Dutch individuals in general. Remarkably however, the effect of church attendance is now reversed; more frequent churchgoers in medium-to-large cities are less opposed to ethnic intermarriage. Persons living in these municipalities have lower church attendance rates than the average Dutch individual.

Regarding the neighbourhood and municipalities characteristics, we once again observe that, in agreement with the contact hypothesis, the higher the percentage of ethnic minorities in the municipality, the lower the opposition to ethnic intermarriage. An increase in the percentage of ethnic out-groups at the municipality level increases opposition to ethnic intermarriage significantly.[13] Once again, the higher the inward-moving mobility, the less opposition respondents express to ethnic intermarriage. Other structural characteristics did not significantly affect opposition to ethnic intermarriage once individual level-characteristics and mobility were controlled for.

The next question is whether the explanatory model for opposition to ethnic intermarriage on this sub-sample is similar to explanatory models for other antagonistic views on this sub-sample. We compare the explanatory model for opposition to ethnic intermarriage with the explanatory models on whether there are too many immigrants in the Netherlands, and on the extent to which the Dutch government should be lenient in issuing residence permits to persons whose life is at risk in their country of origin. In order to compare the effect sizes of the independent variables, we standardized the respective dependent variables. The education effect is consistent across the three models. Church attendance reduces opposition to ethnic intermarriage, and more frequent churchgoers agree less often on there being too many migrants in the Netherlands. Catholics and Protestants are more opposed to ethnic heterogamy than the non-religious, but do not have different views on granting a residence permit to someone whose life is at risk and do not agree more or less often in there being too many migrants in the Netherlands. This is another indication that opposition to ethnic intermarriage overlaps with opposition to religious heterogamy.

None of the contextual characteristics influence views on granting a residence permit to someone whose life is at risk. In the models regarding opposition to ethnic intermarriage and the view on whether there are too many immigrants in the Netherlands, an increase of ethnic minorities at the municipality level leads to more antagonistic views. In these two models, higher mobility rates lead to less antagonistic views. The non-significance of the economic situation of the municipality is likely due to the smaller sample size. Notwithstanding some noteworthy differences, the model pertaining to attitudes toward the number of immigrants in the Netherlands and the model regarding ethnic intermarriage are almost identical (Table 3).

Conclusions

We observed a weak variation across municipalities in mean levels of opposition to ethnic heterogamy. Most of this variance was explained by compositional differences, for which we found that the individual-level characteristics are in line with Ethnic Competition Theory. The strongest municipality variance reduction was caused by the religious composition of the municipality. Religiosity turned out to be a

Table 3 Comparison of explanatory models for different antagonistic views. $N_i = 771$[a]

	Ethnic intermarriage		Residence permit for someone whose life is at risk		There are too many migrants	
	P	SE	*P*	SE	*P*	SE
Constant	0.01	0.17	0.12	0.17	−0.20	0.17
Parental characteristics						
Parental education (in years)	−0.01	0.01	−0.02	0.01	−0.01	0.01
Father's social class (unskilled manual = ref.)						
Higher professional.	0.09	0.13	0.08	0.13	0.21	0.13
Lower professional	0.12	0.13	0.15	0.13	0.21	0.13
Routine non-manual	−0.05	0.13	0.17	0.13	0.11	0.13
Small self-employed	−0.06	0.13	0.25	0.13	−0.04	0.13
Skilled manual	0.13	0.12	0.14	0.13	0.11	0.12
Respondent's characteristics						
Age × 10	0.07∼	0.04	−0.08*	0.04	0.07∼	0.04
Male	0.09	0.07	−0.21*	0.07	−0.04	0.07
Education (in years)	−0.05*	0.01	−0.07*	0.01	−0.05*	0.01
Employment status (unskilled manual = ref.)						
Pensioner	0.12	0.19	0.08	0.19	0.00	0.19
Student	−0.10	0.23	−0.22	0.24	−0.01	0.23
Disabled	0.06	0.20	−0.06	0.21	−0.03	0.20
Unemployed	−0.37∼	0.21	−0.31	0.22	0.00	0.21
In care of household	−0.15	0.25	0.20	0.26	0.10	0.25
Higher professional	−0.15	0.17	−0.20	0.17	−0.34*	0.17
Lower professional	−0.04	0.16	−0.20	0.16	−0.19	0.16
Routine non-manual	0.02	0.17	−0.04	0.17	−0.03	0.17
Small self-employed	−0.13	0.30	−0.08	0.31	−0.11	0.30
Skilled manual	−0.13	0.20	−0.20	0.21	−0.21	0.20
Religiosity						
Church attendance × 10	−0.05*	0.02	0.03	0.03	−0.08*	0.02
Denomination (no denomination = ref.)						
Missing	0.24	0.19	0.64	0.20	0.00	0.19
Roman Catholic	0.37*	0.09	0.05	0.09	−0.14	0.09
Dutch Reformed/Calvinist	0.27*	0.12	−0.09	0.12	0.07	0.12
Other Calvinist	0.53*	0.25	−0.15	0.25	0.16	0.25
Other Christian denomination	0.05	0.21	−0.28	0.21	0.06	0.21
Other religion	0.00	0.22	0.11	0.23	0.08	0.22
Neighbourhood characteristics						
Percentage of ethnic minorities						
Change in percentage of ethnic minorities						
Socio-economic disadvantage						
Change in socio-economic disadvantage						
Relative inwards-moving mobility × 10	−0.08*	0.02			−0.10*	0.02
Municipality characteristics						
Percentage of ethnic minorities	−0.01	0.01			−0.01*	0.01
Change in percentage of ethnic minorities	0.09∼	0.05			0.14*	0.05
Socio-economic disadvantage						
Change in socio-economic disadvantage						
Relative inwards-moving mobility × 10	0.04	0.03			0.07*	0.03

*$P<0.05$; ∼$P<0.10$ (two sided test of significance).

[a]Standardized dependent variables. Higher scores indicate higher levels of antagonistic view.

strong predictor for opposition to ethnic heterogamy. Since religiosity effects opposition to mixed marriages with Moroccans, Turks, and Surinamese equally, we tentatively conclude that the effect of religiosity is not due to a particular dislike of Muslims. Parental education and father's social class contributed to the explanatory power of the model even after controlling for respondents' characteristics.

We did not observe a significant variation across neighbourhoods in opposition to ethnic intermarriage when we took into account that neighbourhoods are nested within municipalities. However, we showed that contextual characteristics of both municipalities and neighbourhoods affect attitudes towards ethnic heterogamy, where the municipality level plays a larger role. Within the Netherlands, individuals do not hold more, but less negative views on ethnic out-groups when the percentage of such groups in municipalities is higher. This finding holds for both the lower and higher educated; therefore in support of contact theory. Interestingly, at the neighbourhood level, for respondents with low educational levels—whom we assume to be relegated to neighbourhoods with higher percentages of ethnic minorities due to economic constraints—the percentage of ethnic minorities is related to more opposition to ethnic intermarriage. This finding clearly supports the threat mechanism. On the other hand, for higher educated individuals, larger out-groups within the neighbourhood are related to less opposition to ethnic intermarriage. This is likely the result of white flight and selective in-migration of individuals who have the luxury to choose their neighbourhood.

A relative increase in the size of the ethnic out-group at the municipality level increases opposition to ethnic heterogamy, especially in municipalities with relatively large out-groups. In the absence of increasing residential and occupational segregation, increasing out-group sizes will increase (non-intentional) contact. With larger out-group sizes it is harder to avoid contact. On the other hand, in these cities, intentional contact will hardly increase with even larger out-groups sizes; the opportunities for intentional contact were already present. Consequently, the tolerance-to-contact relationship confounds the threat mechanism less when the out-group size is already large and the threat mechanism induced by an increase in out-group size may be easier to observe.

Economic characteristics of the municipality account partially for the negative relation between group sizes and opposition to ethnic intermarriage. Studies that interpret the negative correlation between proximity of out-groups and prejudice as supportive for the contact hypothesis suffer a severe weakness if they do not control for the economic condition of the geographical unit.

A deteriorating socio-economic status at the neighbourhood and municipality levels increases opposition to ethnic intermarriage. We therefore find confirmation for our economic environment hypothesis. Moreover, the mechanism by which group competition leads to exclusionist attitudes and in turn to opposition to ethnic intermarriage is only confirmed for economic competition, cultural competition, and physical competition at the neighbourhood and municipality levels do not induce antagonistic attitudes. If ethnic competition causes antagonistic attitudes, our findings show that economic competition is the most important, if not the sole, type of competition within the locale that causes an increase in opposition to ethnic heterogamy within the Netherlands. The perception of cultural and physical competition may be influenced by the mass media, as a consequence, the regional variation in perceived cultural and physical threat may be low within a nation.

The higher the relative inward-moving mobility within neighbourhoods, the less-exclusionistic attitudes respondents express. This was contrary to our expectations. Mobility explains in part the effect of economic competition at the contextual level. If people have a choice, they will not move into a disadvantaged neighbourhood. A high inward-mobility rate is therefore a likely indicator for a popular locale and favourable economic environment.

In this contribution we showed that within the Netherlands, the competitive environment of neighbourhoods and municipalities play a modest role in the explanatory model of antagonistic attitudes compared to individual-level characteristics. However, we found confirmation for both the contact mechanism and the threat mechanism within neighbourhoods and municipalities. An increase in relative out-group size is linked to higher levels of antagonistic attitudes. On the other hand, the present relative size of ethnic minority groups within the neighbourhood activates the threat mechanisms under unfavourable economic conditions but mechanisms of the contact theory (contact-to-prejudice-reduction or tolerance-to-contact) under favourable economic conditions. ECT should be further refined in order to explain why, at specific measurement levels, specific forms of competitive threat lead to an increase in some antagonistic attitudes and not in others. Longitudinal data on residential change and residential segregation are necessary to further disentangle the contact, threat, and selective migration mechanisms, which operate simultaneously within neighbourhoods and municipalities.

Notes

1. Gijsberts and Dagevos (2004) posed the same hypothesis but were unable to test it due to their smaller sample size of individuals and municipalities.
2. It is not self-evident that the negative relationship between percentage of foreigners and prejudice would have remained significant once other relevant contextual characteristics were controlled for. And although we fully acknowledge the rigor of the study, surprisingly, the item measuring the frequency of contact in the neighbourhood is not included in the final multi-variate model explaining prejudice.
3. The Netherlands Kinship Panel Study is funded by grant 480-10-009 from the Major Investments Fund of the Netherlands Organization for Scientific Research (NWO), and by the Netherlands Interdisciplinary Demographic Institute (NIDI), Utrecht University, the University of Amsterdam and Tilburg University.
4. Change scores in percentage of ethnic minorities between the years 2001 and 1997, and 2001 and 1995 do not lead to different results.
5. A positive score indicates that the socio-economic situation within this specific locale improved less than average.
6. We would like to kindly thank L. Prins and his colleagues of the Dutch police force (*Korps Landelijke Politiediensten, Dienst Nationale Recherche Informatie, Onderzoek en Analyse*) for making these data available for us.
7. At the municipality level we also constructed the variables *relative outward-moving mobility* and *relative mobility*. These variables do not lead to different results.
8. Control dummies for mean value substitution do not reach significance during the analysis and do not influence the estimates of the other variables included in the model.
9. The models presented in this paper are estimated in MLwiN version 2.00. If one wishes to estimate the within and between neighbourhood variance, one needs at least two respondents per neighbourhood (Snijders and Bosker, 1999). Our data contains 1,378 neighbourhoods with two or more respondents; therefore the observed absence of variance at the neighbourhood level in the three-level model is not caused by the relatively small samples within each neighbourhood. In a two-level empty hierarchical random intercept model which only includes the neighbourhood level and the individual level, the variance component at the neighbourhood level is significant.
10. There was no problem with multicollinearity in estimating the models. We analysed this by the 'expert' macro for MLwiN 2.0 developed by Ruiter (http://oase.uci.ru.nl/~sruiter/).
11. We also included the variable change in percentage of ethnic minorities at the municipality level since in model 5 the *z*-value of the estimated parameter was larger than 1.
12. These cities are: Amsterdam, Rotterdam, The Hague, Utrecht, Hoogezand-Sappermeer, Almere, Enschede, Tiel, Alphen aan den Rijn, Delft, Dordrecht, Bergen op Zoom, and Eindhoven. The sub-sample contains 275 neighbourhoods.
13. An increase in relative out-group sizes at the municipality level forms a stronger ethnic threat when the out-group is already relatively large. We also confirmed this for our full sample ($N = 6{,}095$). An increase in the out-group size once the relative out-group size is already above the Dutch average increases opposition to ethnic intermarriage.

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